

THE PUBLIC BUILDINGS DURING THE FRENCH COLONIAL PERIOD IN LAOS

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Abstract

As a country following the Buddhist tradition, Laos' architecture is also strongly influenced by Buddhism and is reflected in the constructions of temples, pagodas, houses, towers, et cetera. Since becoming a colony of France from 1893-to 1953, the new Laos architecture has had many changes. The French colonialists wanted to mark their domination over Laos, so they built many public buildings with characteristics of French architecture, such as administrative buildings, schools, hospitals, post offices, et cetera. Most of the public buildings' authority clearly shows the novel influence of French architecture in a country used to feudalism. The French created public buildings in Laos to create an operating apparatus and manage and execute the tasks set out by the government to rule the colony. In this paper, the author presents Lao public buildings' features during the French colonial period. The public buildings we mention in this paper are almost from three cities Vientiane, Luang Prabang, and Savannakhet.

Keywords: Lao public buildings, Characteristics, the French colonial period, Cultural context, tropical climate, adaptation.

1. INTRODUCTION

During the French colonial period, the French built many public buildings in the Western classical style to serve political stability and establish a long-term domination regime in Laos. The French also wanted to impose Western culture on the local culture to show the civilization and progress of the colonizers [12]. During this period, with historical changes in politics, culture, society, et cetera, the traditional public architecture in Laos, such as palaces, mansions, was almost no longer developed and built more and instead were public buildings in an entirely new Western architectural style, oppressive and modified according to local architecture. However, the French colonial government in Laos did not have much budget to develop infrastructure like in Vietnam, so it was not easy to see a large buildings like in Hanoi or Saigon. Nevertheless, the public buildings in Laos still made a modest impact in most of Laos' major towns and cities, such as Vientiane, Luang Prabang, Savannakhet, et cetera. In addition, the French have integrated the traditional Laos architectural style with the French architectural style and modified the architectural elements on the public buildings to suit Laos' natural and climatic conditions. Furthermore, this harmonious combination has brought character and value to the buildings in those big cities; this is also the period that represents the most significant evolution in the history of architectural development in Laos. With the analysis of the definition of public buildings according to the documents circulating in France [1], it is considered that the public buildings in Laos consist of main types: the first is a multi-functional public building, both as an administrative office and as a residence (governor's residence); The second is a single-function administrative building with the primary function of doing public buildings and managing the government: court offices, banks, treasuries, hospitals, schools, et cetera [1].

2. URBAN FORMATION IN LAOS DURING THE FRENCH COLONIAL PERIOD

Before the arrival of the French, Laos was a country with almost no concept of "urban culture". From 1893 to 1953, France placed its domination on Laos; during this period, in Europe, modern architecture was developing rapidly and had a significant influence on other countries. In most towns and major cities during the French colonial period, traditional Laotian architecture was modified with French architectural elements to suit the tropical climate. This time was the most critical period in the development of architecture in Laos; the harmonious combination between the traditional architecture of Laos and the French colonial style has left many valuable buildings in many big cities in Laos, and they are preserved to this day. Besides, the urban properties in Laos during this period also changed a lot. The French built strategic urban areas mainly located in the areas along the Mekong River because these were the locations of the city convenient for traffic. These urban areas are located in Vientiane, Luang Prabang, Thakkek, Savannakhet, Champasak and are relatively small. The French built these urban areas in many different ways to maximize the efficiency of colonial occupation and exploitation, such as designing a completely new urban area on a wasteland (Champasack), building new constructions intertwined with existing urban areas (Savannakhet, Luang Prabang), or restore old urban areas (Vientiane). In discussing the choice of construction form of public buildings in Laos, the French relied on the local people's climate response experiences in building traditional houses to build administrative buildings in particular and other facilities in general.

The indigenous culture and lifestyle of local people greatly influenced the architectural design, creating a unique architectural style. The traditional architecture of Laos mainly existed in three typical types: residential buildings, vernacular architecture, and religious buildings [11]. Specifically, before becoming a French colony in 1983, the Laotian town consisted of only old stilt houses made of wood or bamboo, with a characteristic thatched roof style [14]. These traditional stilt houses were a fascinating cultural heritage, powerfully demonstrating the Laos people's sense of community and religious beliefs. In addition, the architectural style of these traditional stilt houses reflects the will to face challenges in hot, humid, and harsh climates [2]. Villages in Laos are often located near rivers, so the houses will have a front porch raised due to avoid the heavy annual floods and keep out predators while creating a space underneath that makes the floor cooler in the middle days when the weather is scorching; when the ground is dry, the lower part of the stilt house will be used for handicraft production or cattle-rearing. Besides sleeping, all family activities occur outside in the summer, on the patio [16] [9]. The old wooden stilts house has a curved roof; this curved shape is made of a curved plank called a gable cover placed at the edge of the gable to keep the roof tiles or thatched roof layers from being blown up by the wind [10] [4]. The materials of traditional houses in Laos are usually made from many types of wood and built in one day. Besides, many stilt houses are built with bamboo - a material that is relatively easy to find in the natural environment and easy to construct [14] (Figure 1).



Figure 1: Tradtional stilt houses in Laos (Source: Author)

In addition, besides these stilt houses, there was a traditional Lao-style house that was also very unique. Lao people usually built this type of house for the higher classes of Lao society, often

found in the central areas of the community. It is a house with a double roof and two peaks like two mountains; the main door opens at the gable side (different from the Vietnamese tile-roofed house, the main entrance usually begins at the side along the length of the roof. Roof materials are made from thatch, bamboo, wood, and clay (terracotta). The roof will be covered with a thick layer of materials from leaves to insulate and cool the temperature inside the house. The roof fringes are decorated with arrow-shaped wooden motifs alternating up and down, often facing North and South to avoid rain and hot wind [10]. Materials of the building structure, such as frames, floors, columns, and walls, are all made of wood [14]. The floor is high, about 1-1.5 meters from the ground and the stairs to get up and down the house will be 1.2 meters wide [16]. Patios and columns are often decorated with unique patterns of the Laos ethnic group and are usually made of wood [4] (Figure 2). Thus, through determining the location to establish urban areas and based on the characteristics of traditional architecture in Laos, the French gradually developed public areas under the guidance of urban culture in the Colonial period.



Figure 2: Lao people usually built this type of house for the higher classes of Lao society
(Source: Author)

The French chose Vientiane as the administrative center of the colonial government; the purpose was to restore this ancient citadel and turn Vientiane into the country's administrative center. The new French-built urban area was located north of Vientiane and was planned according to the European model. Buildings replaced the old royal center of the former city of Vientiane with the primary function of the colonial government apparatus. Typically, in 1925, the Residence Superieure building was built on the grounds of the old royal palace, which was heavily damaged by the war. Public buildings were also scattered around this area. However, France had encountered many complex problems; the population growth in Vientiane was considered the most difficult. Because the population here was tiny, it was impossible to establish Vientiane as a large urban area. When the construction of the administrative headquarters began in Vientiane, the French found that the Lao people were not inclined to live up to their expectations when it came to building structures that served the French administration. The Lao people were unable to provide the active workforce they needed. Therefore, the French had come up with a solution by using Vietnamese immigrants to Laos to supplement the construction building of public buildings and other buildings here. They considered their successes in building infrastructure in Vietnam as a good reason to reuse this experienced human resource. Therefore, it was not uncommon to see some solutions for public buildings in Laos having some similarities with French colonial buildings built in Vietnam [9]. The French mainly carried out the revival of Vientiane in the early twentieth century, and colonial buildings in Vientiane were built from 1913-to 1979 [10]. The main axes, important monuments, and urban symbols of the ancient capital of Vientiane were all tried to keep by the French and built based on what was destroyed by Siam in 1828 [9]. Because of this feature, this important urban attribute also influences the styles of public buildings built by the French in Vientiane.

In the eighteenth century, the Luang Prabang dynasty was also formed among dynasties like Vientiane and Champasak; this is a small kingdom but has a long history with ancient buildings going into the history of Laos. Ancient temples with a lifespan of hundreds of years

were built by many different kings, and traditional wooden houses running along small roads give the capital of Luang Prabang a rare ancient look. However, at this time, Luang Prabang was only a weak kingdom, and the military was still weak and had to offer tribute to neighboring countries regularly. However, everything changed when the French annexed these territories into the Indochinese federation and exerted significant influence in 1893. During the French colonial period, Luang Prabang was expanded with more roads and built more buildings bearing the impression of French colonialism interspersed with the indigenous architectures available here. These buildings were all designed to adapt to tropical weather. The French built most public buildings with thick walls, and residences for officials in possession were constructed of brick and mortar with tiled roofs and wooden windows. Later, the appearance of Neoclassical architecture combining traditional and colonial elements created an attractive aesthetic component of the architecture of Luang Prabang.

In 1895, while waiting for the plan to restore Vientiane as the capital of Laos, the French temporarily chose Savannakhet as the capital of Laos. The planning and construction went relatively smoothly because Savannakhet had many abandoned lands, few people lived and mainly concentrated in the North. Therefore, the temporary capital was built in the southern area of Savannakhet and planned according to the Western urban model, and developed along the Mekong River in the North-South direction. The French architectures built here are mainly villas mixed in the local area and row houses in the central area. Besides, many important French-style architectural buildings include hospitals, schools, harbors, post offices, et cetera. Currently, the number of public buildings in Savannakhet is relatively tiny, and most of them have been converted to functions used to match the needs of society [2]. Nevertheless, regardless of the form of urban construction, they were still designed on checkerboard routes, as is standard Western planning, and French colonial architecture or extensive public buildings of the French were located close to the main road, primarily to serve the French who were on duty in Laos [10].

3. THE ARCHITECTURAL STYLE OF PUBLIC BUILDINGS IN LAOS DURING THE FRENCH COLONIAL PERIOD

Like the other colonial countries of France, colonial architecture in Laos is a cultural influence, bringing different results over space and time, creating an architectural style between indigenous and western characteristics. Colonial architecture in Laos also went through two primary stages: the stage of imposition and the phase of incorporation. During the period of imposition, under French colonial rule, there were only a few urban centers located in strategic locations, as discussed above, and French-style public buildings of the small to medium scale were built but mainly copied the prototype from France to serve the French and carry out critical missions in Laos. Most of the public buildings in this period were highly pragmatic, taking construction techniques from the West and straightforward functionalism; however, the indigenous traditional art of Laos was not respected. In the next stage, France had just begun to learn and research the local's characters and the climate in Laos to figure out solutions to change the archetypal architecture to suit and re-consolidate the Laos people's faith. In other words, for long-term exploitation, colonial architecture in Laos at this time was considered the role of expressing harmonizing policies and giving more importance to indigenous factors.

Specifically, Laos's public buildings are located in three major cities: Luang Prabang in Northern Laos, Vientiane in Middle Laos, and Savannakhet in Southern Laos. Same in Vietnam and Cambodia, the French paid attention to the annual flow and wind speed brought into the project to cool and dry the interior spaces in Laos' administrative buildings because Indochina is located in a high-altitude area. The humidity is relatively high; it is easy to make the spaces mold [7]. The essential natural ventilation solutions for public buildings in Indochina are how to

catch the enormous amount of wind and, at the same time, minimize the wind-quiet area; this dramatically affects the location planning and shape of public buildings.

Luang Prabang is located in an area with mostly hilly terrain, so the French attached great importance to local topographic and landscape issues. The climate here is similar to the midland mountainous region of Vietnam. It is also identical to the environment of the mountains and northern France, so the architecture of public buildings in Luang Prabang bears many similarities with the French local architecture. Public buildings in Luang Prabang were taken advantage of the natural topography; the French paid particular attention to planning the road network on the contour lines, so public buildings here did not affect the natural landscape. Luang Prabang has a large land area, so the construction of public buildings according to the provisions set out in the Cornudet Law was not complicated [11]. Public buildings have a layout that ensures the planning distance with indigenous houses, trees, and the topography of the mountains; therefore, the landscape here is harmonious and does not disturb the landscape nature.

Although Vientiane and Savannakhet are located in Central Laos and Southern Laos, they have a similar topography to the Middle of Vietnam, with the majority of plains at the foothills or surrounded by peaks. The climates of the three regions are also relatively similar. However, the only difference is that the central part of Vietnam is located close to the coast, so it is affected by solid and prolonged storms. When the storm moves to Middle Laos or Southern Laos, the storm decreases gradually or almost entirely into a tropical depression. Therefore, when the French built public buildings in the middle of Vietnam, they mainly had solutions to combat storms, while in Vientiane and Savannakhet, there were solutions to combat heavy rain and high wind. Vientiane and Savannakhet's architecture is similar in style to other areas, but the house's structure is substantial. The thicker the building, the more wind resistance it has, so the plan of the buildings is broad in width, large in size, and has a long rectangular shape. The East and west facades are subject to heat from the sun, and according to the high outside air temperature, this cubic form will quickly implement natural ventilation measures.

In terms of design style, the French, in addition to combining Western architectural elements and indigenous architectural elements in the colonial architectural style in Laos, also reuse the architectural styles they have applied in Viet Nam. In addition, they used new European and Chinese construction techniques. At the same time, they drew inspiration from the traditional temples with old wooden structures of Laos - which are suitable for the warm and humid climate of Laos, et cetera. All of the above produces the type of architecture belonging to the Laotian style. The unique site is found only in Laos [11]. In particular, the buildings with public functions are located between the central area and in harmony with nature, bringing unique characteristics to urban areas planned by the French. Based on architectural components, construction techniques, materials, colors, and details of patterns, it is possible to divide public buildings in Laos according to the main colonial styles in each period as follows:

Barracks style (also known as pre-colonial architectural style): In the early colonial period, the French had to live in stilt houses of indigenous people and build some temporary houses to live in for a short time; after that, the French needed to set up quickly accommodation for French soldiers stationed in Laos, so barracks-style buildings appeared to meet the needs of users. Therefore, buildings of this style are elementary, with little attention to aesthetics. The decorative details of the column tops or the elaborate roof frills found in classical Western architecture were almost minimalist but only exploited a little from Renaissance architecture as balustrades or plastering with flowers and leaves. The form of barracks-style public buildings is straightforward with a rectangular plan, a wide veranda running around the house, pitched roofs with tiled roofs, walls built with load-bearing bricks to support the roof, Roman rolling arch

doors with the lock stone is used to decorate the front of the house or the pediment roof on the top of the entrance canopy, the height of the building is usually only one or two floors (Figure 3).



Figure 3: Pre-colonial architectural style (Source: Author)

The Neoclassical style: public buildings will be copied from the original building from France to flaunt the power - the primary purpose of the French colonialists. The building usually has French architecture's structural frame, such as walls, columns, and foundations made of load-bearing bricks, wooden roofs, and tiled roofs. The building still uses a strictly symmetrical layout, but the geometric structure and proportions of classical architecture are still observed. Although these buildings are not as prominent in scale as others built at the same time in Indochina, they make a strong impression in history and simulate the Neoclassical architectural form of this period. The decoration of neoclassical public buildings can be copied originally from France because the skills of the local artisans have been enhanced, or Vietnamese artisans who had good experienced were imported (Figure 4).

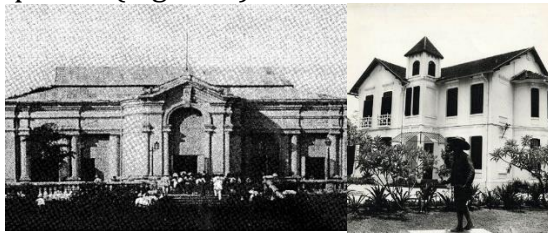


Figure 4: Neoclassical architectural style (Source: Author)

Indochina Style: The Cornudet Law was born after the First World War to re-plan cities and shape the general architectural style for the Indochina region [13]. Since 1920, Architect Ernest Hébrard has been the proponent of the Indochinese architectural style, which combines Western and Eastern architectural cultures [6]. This style is very diverse. Indochinese Public buildings in Laos blend French architecture with Laotian architectural culture and sometimes even with Vietnamese-Chinese architectural culture [5] [2]. Buildings of this style are often influenced by three key factors: the indigenous culture of the Lao people, religion, and Western culture. Even though the detailed decorative pattern has a mixture of Western and indigenous elements, the structure still uses the French wall, column, and foundation structure (Figure 5).



Figure 5: Indochina Style (Source: Author)

4. THE GENERAL ARCHITECTURE OF PUBLIC BUILDINGS IN LAOS DURING THE FRENCH COLONIAL PERIOD

Most of the French public buildings in Laos still maintain the familiar spirit of classical Western architectural principles, such as wooden windows, tile roofs, thick walls with balconies, eaves, et cetera. In constructing public buildings, the French introduced European construction

techniques and materials. However, Western architectural structures in Europe have often used stone materials. During World War II, transporting stones to colonial countries was very difficult, and exploiting to use of stone in the colony was also very time-consuming; Therefore, in order to be on schedule and to function appropriately for the buildings built in Laos as well as in other colonial countries, the French chose brick material locally available [3]. Previously, bricks and stone in Europe were initially only used for churches and large buildings, but bricks were widely used in public buildings in Laos. Thus, there is a transformation from traditional Laotian houses from a structure built of wood and bamboo to buildings made of wood-cob wall, then brick-wood or brick-cob wall, and finally, the buildings were made from bricks and plaster. In addition, the French architects also modified the designs to suit the hot and humid tropical climate through the addition of awning balconies and interior corridors.

In the traditional constructions of Laos, the building structure is mainly column and beam structure, still making full use of local materials such as wooden columns and beams, wooden roofs, bamboo walls, fired clay tiles, in which the construction method was mainly still in the traditional style. During the colonial period, public buildings had more modern construction methods and materials, such as a mixture of brick wall structures, clay tile roofs, and plaster brick walls. There was a transition in the structure and materials of traditional Laotian architecture to this colonial architecture due to the influence of flexible space in the Laos traditional house space: the house could easily change the functional space to suit the needs of Laotians. Therefore, wooden materials with the traditional construction style were converted to a more stable and durable structure with materials such as bricks and cement to reinforce the structure construction. To see that the elements of respecting the locality have been done very well by French architects, for example, by analyzing some solutions of two typical public buildings in Laos.

Military Headquarters buildings - Luang Prabang - Laos:

This building was built in 1925 and completed in 1926, formerly the office of the military headquarters. Currently, the building has been converted into the administrative center office of Luang Prabang. The building was built on a relatively flat land designed by French architect Veysseire. The building is the style of the pre-colonial architectural style, with an overall symmetry following the principles of Classical architecture [8]. This building has two floors with a thick but straightforward cubic form and was firmly located in the north-south direction to avoid the impact of stormy winds; the author has paid attention to the direction of the building to suit the climate of Luang Prabang. The main entrance is a giant ladder located in the middle of the building with two ramps on both sides and two side entrances located at the two gable corners of the building. The steps are about 4m apart, and the working rooms on the two floors are relatively similar and stick to the side corridor axis in front of the building facade (Figure 6).

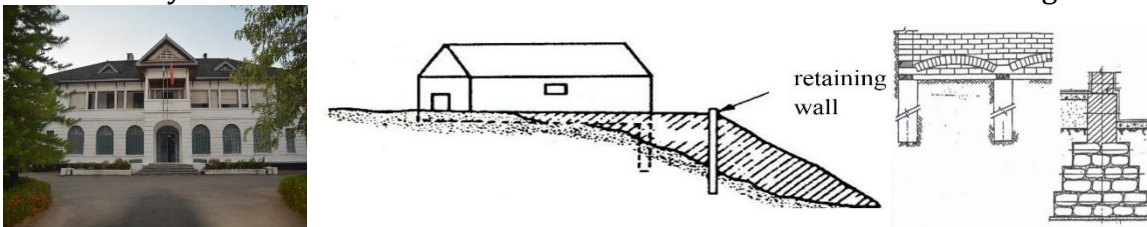


Figure 6: Military Headquarters buildings - Luang Prabang - Laos (Source: Author)

The door system of the building is very remarkable. The lower level does not have a sun terrace of the usual colonial style but a series of 2.85 meter high windows located directly on the outer wall. Although there is no veranda to avoid rain and sun, these large windows keep the lower floor from getting sunlight and are still airy if closed when it rains or is too sunny due to the side shutter system with outer and inner glass. Upstairs is a row of side corridors about 1.75 meters away, and then there are rooms with shutters. The top is a 2-layer tile roof system against

heat and cold, reaching far to avoid rain; a wooden console supports the roof. The slope of the roof is 32 degrees. The roof protects the sun from the sun instead of the awning running along the corridor upstairs. The sun shines directly from the East in the morning, but the roof combined with this upper corridor will help avoid sunlight. The space under the roof is very airy with enough light due to the triangular roof windows 2 meters wide, 1.6 meters high, and a large skylight located in the middle, creating convection airflow between the inside and outside of the building, creating a relaxed feeling for the roof basement like the floors below the building.

The foundation of the building is a shallow bearing foundation combined with brick arches to avoid water infiltration from the ground and, at the same time, transmit the load from the wall to the pillars and columns bearing the main load. So, although the building does not have a basement, the first floor is still moisture-resistant to the above treatment. There is also a retaining wall system to avoid landslides. The load-bearing wall made of refined brick ensures adaptation to the hot and cold climate in Luang Prabang. The inside of the beams and purlins are made of wood soaked in water to prevent termites.

The building is arranged with a fireplace similar to the Indochina financial office in Hanoi to combat the cold in winter and help the air in the building circulate well (Figure 12).

The French have cleverly created an airy vision when looking at the facade of the building. Trees are carefully selected to match the architectural space. Primarily there are pine trees to show the harmony between the building and the surrounding mountains and forests around Luang Prabang.

Ecole Maternelle - Luang Prabang - Laos:

The building was built in 1923 on high ground, facing the Southeast, can both receive sunlight, catch the calm wind from the South, and avoid the hot wind from the West blowing. All rooms were designed with windows facing each other to get a calm wind through the room, creating absolute ventilation. According to French colonial architecture's usual style, the corridor surrounding the building is 2 meters wide to help ventilate, cool, and avoid direct sunlight from outside. The structure of the building remains the colonial style. The roof shape of the building is the design of two large curved slopes of 35-60 degrees lying on top of each other, modeled on the traditional roof style of religious architecture in Laos [15]. Two roof gables have windows for ventilation. The roof's structure has a curved slope and overlaps the roofs; therefore, there will be breezeway blocks between the two layers of the roof that are incredibly cool and well-lit. The high slope of the roof will help the building to drain rainwater well and avoid rainwater infiltration; this was because the French applied the old experience of traditional Laotian architecture in the construction of religious buildings, which paid great attention to ventilation, especially incense smoke and roof drainage (Figure 7).



Figure 7: Ecole Maternelle - Luang Prabang - Laos (Source: [17])

The building is mainly made from materials that are readily available locally. For example, the roof frame, including pillars, longitudinal beams, crossbars, trusses, et cetera, is made from excellent wood, and tiled roofs and thick walls are made of baked bricks. The building is painted yellow; the windows are blue; the roof is covered with red tiles, blending in with the surrounding

natural scenery. Because the rainfall in Luang Prabang is quite high, the French did not use the gutter for stormwater drainage, but they chose the solution of free roof drainage by making the roof open to a distance of 0.5 meters. Because of the free drainage of rainwater, the building's foundation is raised to avoid mold caused by rainwater and help reduce heat absorption from the ground. A series of wooden windows 1 meter wide and 1.5 meters high indented into the wall 0.2 meters deep and have windowsills embossed and slanted on the surfaces to prevent rainwater from entering; the louver windows help shield the sun and rain but also at the same time very adequate ventilation. The range of wooden railings along the corridor was inspired by the railing of a traditional Laos stilt house, which is also made from wood soaked in water to prevent termites. It is known that, as the roof structure, this wooden railing is still strong and has almost no signs of corrosion due to weather or termites.

5. CONCLUSION

After conquering colonial countries, one of the ways the French used to flaunt their power was to build architectural buildings in those colonial countries. For example, after acquiring Indochina, they initially built buildings like France. Depending on the climate, culture, and landscape of each region of Indochina, colonial architecture has changed; since then, many new architectural styles have been formed. Laos is one of the colony countries of France. With Western architectural elements imprinted in their minds, the French have skillfully transformed and combined those elements in traditional Lao architecture, giving the appearance to typical buildings in Laotian architecture, especially public buildings.

The French gave the technical solutions in public buildings appropriately to adapt to the complex climate in Laos, such as against moisture, cold, and rain by solutions using awnings, balconies, louvers, breezeway blocks, et cetera, which are simple but highly effective. Moreover, the technique of stormwater drainage with sloping roofs and gutter helps keep the building clean and dry without flooding the foundation. Especially the roof with the function of shading and cooling the hot air for the attic with high-rise construction solutions and additional roof windows is also the difference between colonial architecture in Laos and France. In addition, there are some solutions with trees and water surface, create a buffer space between the building and the surrounding environment, and also increase the ability to adapt to the local climate in Laos. Many public buildings are more than a hundred years old but still show no signs of subsidence or cracking and have good resistance to climatic conditions in different regions of Laos. That proves the French have carefully designed and flexibly combined Laos's indigenous traditional construction techniques and new construction techniques from France.

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